

FILE 'GENBANK' ENTERED AT 12:07:59 ON 23 APR 2001
L1 0 S (HUMAN CYCLIN A1 PROMOTER)
L2 1 S (HUMAN CYCLIN A1)

FILE 'MEDLINE' ENTERED AT 12:10:57 ON 23 APR 2001
E YANG R/AU
L3 514 S E3-E22
L4 7 S L3 AND (CYCLIN A1)
L5 4 S L4 AND PROMOTER

L5 ANSWER 4 OF 4 MEDLINE
AN 1999214202 MEDLINE
DN 99214202 PubMed ID: 10196209
TI Cloning of the **cyclin A1** genomic structure and characterization of the **promoter** region. GC boxes are essential for cell cycle-regulated transcription of the **cyclin A1** gene.
AU Muller C; Yang R; Beck-von-Peccoz L; Idos G; Verbeek W; Koeffler H P
CS Division of Hematology/Oncology, Cedars-Sinai Research Institute/UCLA School of Medicine, Los Angeles, California 90048, USA.. muellerc@CSMC.edu
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Apr 16) 274 (16) 11220-8.
Journal code: HIV; 2985121R. ISSN: 0021-9258.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-AF124143
EM 199905
ED Entered STN: 19990601
Last Updated on STN: 19990601
Entered Medline: 19990517

=> d 15 4 ab

L5 ANSWER 4 OF 4 MEDLINE
AB **Cyclin A1** is a recently cloned cyclin with high level expression in meiotic cells in the testis. However, it is also frequently expressed at high levels in acute myeloid leukemia. To elucidate the regulation of **cyclin A1** gene expression, we cloned and analyzed the genomic structure of **cyclin A1**. It consists of 9 exons within 13 kilobase pairs. The TATA-less **promoter** initiates transcription from several start sites with the majority of transcripts beginning within a 4-base pair stretch. A construct containing a fragment from -190 to +145 showed the highest transcriptional activity. Transfection of **cyclin A1** **promoter** constructs into S2 Drosophila cells demonstrated that Sp1 is essential for the activity of the **promoter**. Sp1, as well as Sp3, bound to four GC boxes between nucleotides -130 and -80 as observed by gel shift analysis. Mutations in two or more of the four GC boxes decreased **promoter** activity by >80%. The **promoter** was found to be cell cycle-regulated with highest activities found in late S and G2/M phase. Further analyses suggested that cell cycle regulation was accomplished by periodic repression of the GC boxes in G1 phase. Taken together, our data show that **cyclin A1** **promoter** activity critically depends on four GC boxes, and members of the Sp1 family appear to be involved in directing expression of **cyclin A1** in both a tissue- and cell cycle-specific manner.

L2 ANSWER 1 OF 1

GENBANK.RTM. COPYRIGHT 2001

LOCUS (LOC): HSU66838 GenBank (R)
GenBank ACC. NO. (GBN): U66838
CAS REGISTRY NO. (RN): 184660-15-9
SEQUENCE LENGTH (SQL): 1743
MOLECULE TYPE (CI): mRNA; linear
DIVISION CODE (CI): Primates
DATE (DATE): 18 Mar 1997
DEFINITION (DEF): **Human cyclin A1 mRNA,**
complete cds.
human.
SOURCE:
ORGANISM (ORGN): Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa;
Chordata; Vertebrata; Eutheria; Primates; Catarrhini;
Hominidae; Homo
NUCLEIC ACID COUNT (NA): 475 a 399 c 437 g 432 t
REFERENCE:
1 (bases 1 to 1743)
AUTHOR (AU): Yang,R.; Morosetti,R.; Koeffler,H.P.
TITLE (TI): Characterization of a second human cyclin A that is
highly expressed in testis and in several leukemic
cell
lines
JOURNAL (SO): Cancer Res., 57 (5), 913-920 (1997)
OTHER SOURCE (OS): CA 126:262452
REFERENCE:
2 (bases 1 to 1743)
AUTHOR (AU): Yang,R.; Morosetti,R.; Koeffler,H.P.
TITLE (TI): Direct Submission
JOURNAL (SO): Submitted (13-AUG-1996) Hematology/Oncology,
Cedars-Sinai Research Institute UCLA School of
Medicine, 8700 Beverly Blvd., Los Angeles, CA 90048,
USA

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..1743	/organism="Homo sapiens" /chromosome="13" /map="13; between WI-3374 and D13S219"
CDS	130..1527	/codon-start=1 /product="cyclin A1" /db-xref="PID:g1753109" /translation="METGFPAIMYPGSFIGGWGE EYLSWEGPGLPDFVQQQPVESEA MHCSNPKGKVLATVARGPDACQILTRAPLGQDP PQRTVLGLLTANGQYRRTCGQGIT RIRCYSGSENAFPAGKKALPDCGVQEPPKQGFD IYMDELEQGDRDSCSVREGMAFD VYEVDTGTLSKSDLHFLLDFNTVSPMLVDSSLLSQ SEDISSLGTDVINVTEYAAEIYQY LREAEIRHRPKAHYMKKQPDITEGMRTILVDWL EVGEEYKLRAETLYLAVNFLDRFL SCMSVLRGKLQLVGTAAAMLASKYEEIYPPEVDE FVYITDDTYTKRQLLKMEHLLLKV LAFDLTVPTTNQFLQYLRRQGVCVRTENLAKYV AELSILLEADPFLKYLPSLIAAAAF CLANYTVNKHFWPETLAAFTGYSLSEIVPCLSEL HKAYLDIPHQPQQAIREKYKASKY

SEQUENCE (SEQ):

1 ggtgttgttc cggacacata gaaagataac gacggaga gcggggcccc gtttgggtc
61 caggcagggtt ttggggcctc ctgtctgggt ggaggaggcc gcagcgcacg accctgctcg
121 tcacttggga tggagaccgg ctttcccgca atcatgtacc ctggatctt tattggggc
181 tggggagaag agtatctcg ctgggaagga cggggctcc cagattctgt ctccacag
241 cagcccggtgg agtctgaagc aatgcactgc agcaacccca agagtggagt tgcgtggct
301 acagtggccc gaggtcccgta tgcttgcag atactcacca gagccccgct gggccaggat
361 ccccccgcaga ggacagtgc agggctgcta actgcaaattg ggcagtacag gaggacctgt
421 gcccaggggta tcacaagaat cagggtttat tctggatcag aaaatgcctt ccctccagct
481 gaaaagaaag cactccctga ctgtgggtc caagagcccc ccaagcaagg gtttgcacatc
541 tacatggatg aactagagca gggggacaga gacagctgct cggtcagaga ggggatggca
601 tttgaggatg tgcgtggatg agacaccggc acactcaagt cagacctgca cttccctgctg
661 gatttcaaca cagtttcccc tatgcgtggta gattcatctc tcctctccca gtctgaagat
721 atatccagtc ttggcacaga tgcgtggatg gtgactgaat atgcgtggat aatttatcag
781 taccttaggg aagctgaaat aaggcacaga cccaaagcac actacatgaa gaagcagcca
841 gacatcacgg aaggcatgcg cacgattctg gtggactggc tgggtggaggt tggggaaagaa
901 tataaacttc gagcagagac cctgttatctg gctgtcaact tcctggacag gttcccttca
961 tgcgtcagga ctgagaacct ggctaagtac gtgcggcggc tgagtctact tgaagcagat
1021 tcgaaatatg aagagatata tcctcctgaa gtagacgagt ttgtctatata caccgatgat
1081 acatacacaa aacgacaact gttaaaaatg gaacacttgc ttctgaaatg tctagcttt
1141 gatctgacac taccaaccac caaccagtt ctccctcgtt acttgaggcg acaaggagtg
1201 tgcgtcagga ctgagaacct ggctaagtac gtgcggcggc tgagtctact tgaagcagat
1261 ccattcttgc aatatcttcc ttcaactgata gctgcggcggc cttttgcct ggcaaaactat
1321 actgtgaaca agcacttttgc gccagaaacc cttgcgtcat ttacagggtt ttcattaaatg
1381 gaaattgtgc cttgcctgag tgagcttcat aaagcgtacc ttgatataacc ccatcgaccc
1441 cagcaagcaa tttagggagaa gtacaaggct tcaaaatgtacc tgcgtgtgtc cctcatggag
1501 ccacctgcag ttcttcttctt acaataatgt tctgaatggc agcacttcca gaacttcacc
1561 tccatatcgt aagtgcacat aatgcgtata ggcttgcgtt cgttggatca actaatgttgc
1621 ttacaataat agatgacatt tttttttttttaatgtt aaatgttccctt agacttttagt
1681 agtttgcgtt atagtccac atttttttttttaatgtt aaatgttccctt agacttttagt
1741 aaa